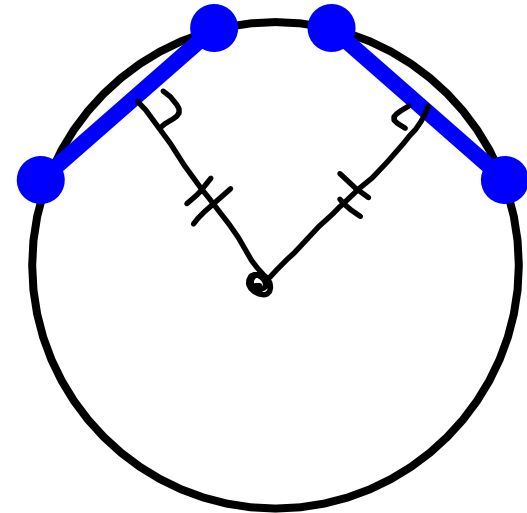


# Properties of Circles

"if and only"  
if"  
if"

1) Two chords within the same circle have the same length iff they are equidistant from the center.



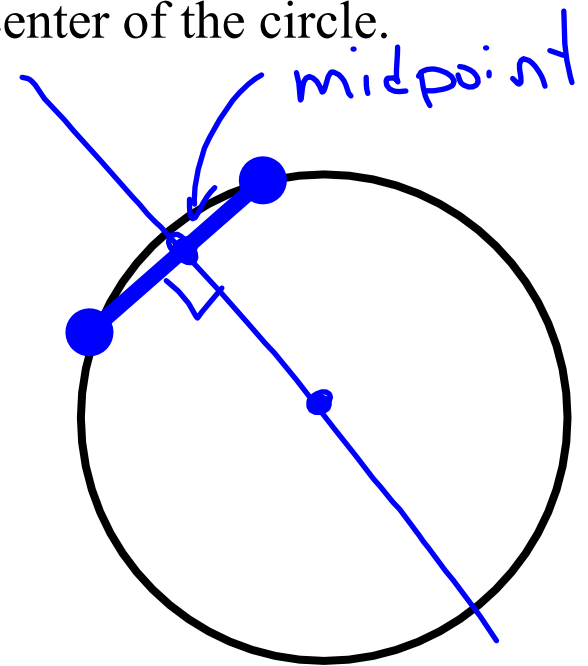
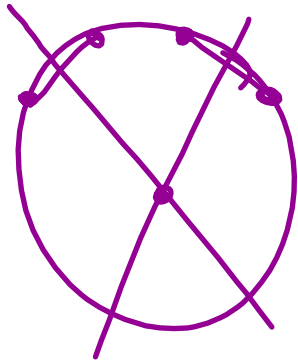
2) The perpendicular bisector of a chord passes through the center of the circle.

to find the center

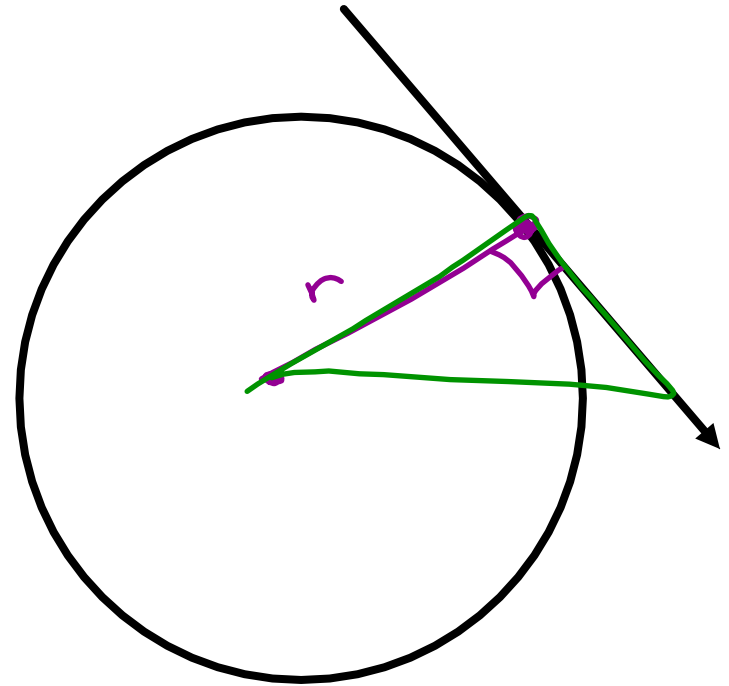
-> draw two chords

-> two bisectors

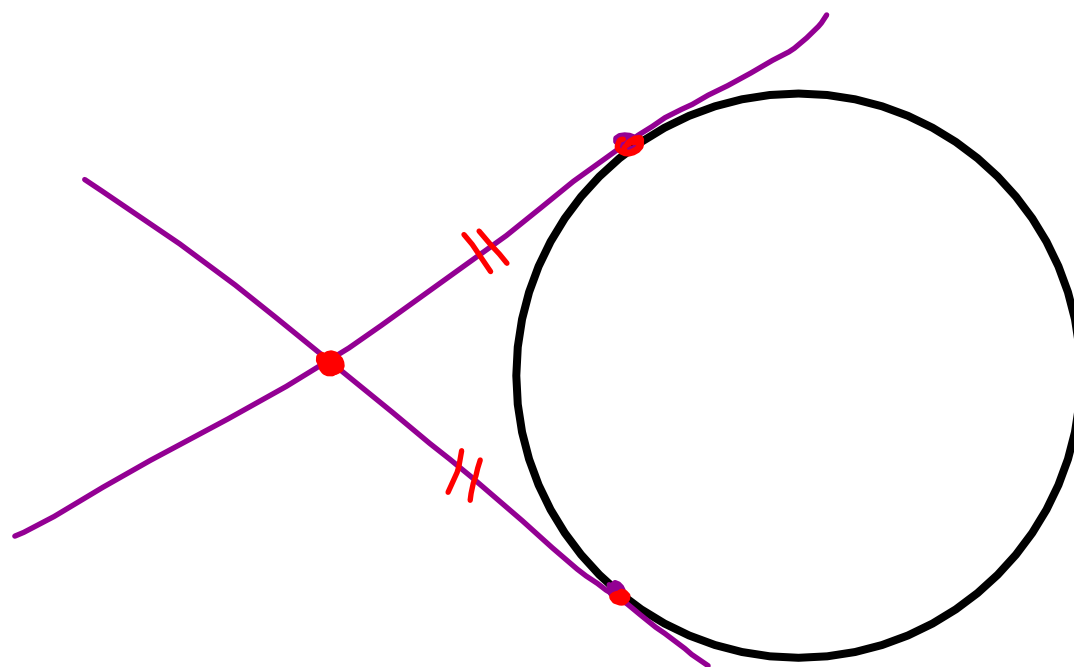
-> find where they meet



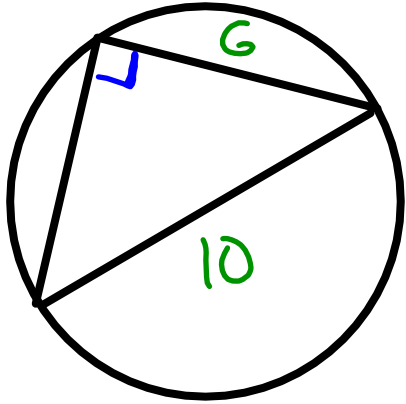
3) A line from the center of a circle to the point of tangency is perpendicular to the tangent.



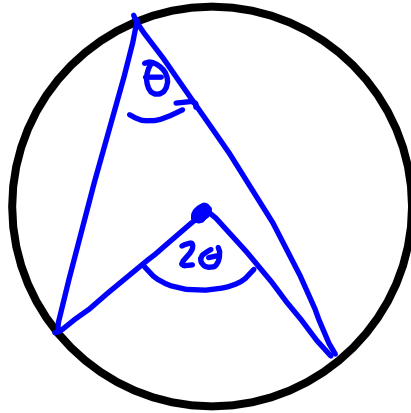
4) Two tangents can be drawn to a circle from any point outside the circle. The line segments between the point and the points of tangency have the same length.



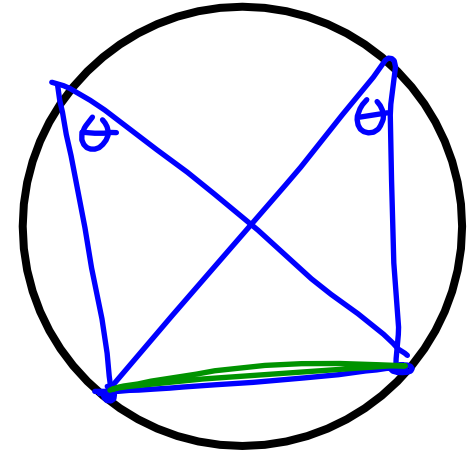
①



②



③



Example 1: Determine the radius of the circle.

